

individual COPCs in real-time. Samples that are collected will be analyzed at a laboratory that will provide results in 3 to 5 days. The sampling approach and laboratory methods are listed in Table 3-1.

The 24-hour composite samples will be collected using portable high volume (or equivalent) ambient air sample pumps and the appropriate particulate size selector and filter, PUF sampler cartridge, or XAD cartridge as required by the analytical method. The COPCs that will be analyzed include mercury, PCBs, and 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (2,3,7,8-TCDD) toxicity equivalent (TEQ).

During the first week of dredging (Days 1 through 6 of dredging) simultaneous samples for dioxin, PCBs, mercury and PM10 will be collected at the following locations PMS#1 and #2. Due to limitations of equipment at location IRS #1 only 3 of the 4 parameters will be collected with dioxin and PCBs samples collected in an alternating scheme.

Week 2 of dredging there will be two days where simultaneous samples for dioxin, PCBs, mercury and PM10 will be collected at the following locations PMS#1 and #2. Due to limitations of equipment at location IRS #1 only 3 of the 4 parameters will be collected with dioxin and PCBs samples collected in a rotating scheme.

After this start-up monitoring, and until results are received, the sampling will follow the rotating schedule provided below. These samples will be analyzed with rapid turnaround which is 5 days. Once data from the start-up is reviewed it is anticipated that the frequency of COPC sampling will be able to be decreased to 1 time per week.

After the start-up sampling, not all samples collected each day will be analyzed for all COPCs. A rotating scheme will be used to analyze the COPCs. An example rotating scheme is as follows;

Day 1 – PM 10 and Mercury
 Day 2 – TCDD
 Day 3 – PCB
 Day 4 – Start over collecting PM10 and Mercury
 Day 5 – TCDD etc

So on Day 1 the 24-hour composites from IRS #1, PMS#1 and PMS#2 will be analyzed for PM 10, and mercury. On Day 2 the 24-hour composites from IRS #1, PMS#1 and PMS#2 will be analyzed for TCDD, etc.

If air monitoring results during the initial 3 weeks of dredging operations indicate that all results are similar to pre-dredge ambient conditions, and all results are less than the residential action levels (i.e., the most stringent air criteria), the sampling frequency will be reduced to one full round of COPCs (dioxin, PCBs, mercury and PM10) at all monitoring locations every 12 dredging days. This sampling regime will continue throughout the remainder of the dredging period. If results continue to meet these conditions throughout the dredging period, COPC sampling will be discontinued upon commencement of capping operations (real-time monitoring will continue during capping). However, if these conditions are not met, or if a COPC exceedance is observed at any time, the following will occur: (1) the sampling frequency will be returned to the rotating pattern of one COPC sample every day so that every 3 days a complete COPC sample set is collected and (2) simultaneous samples for dioxin, PCBs, mercury and PM10 will be collected from the land based air monitoring stations from transect 28+00 to 21+00. Due to limitations of equipment at location IRS #1 only 3 of the 4 parameters will be collected during this period with dioxin and PCBs samples collected in a rotating scheme.

~~When the dredging operations reach the removal area that contains the highest concentrations of COPCs (transects 28+00 to 21+00) simultaneous samples for dioxin, PCBs, mercury and PM10 will be collected. This monitoring will include the following locations PMS#1 and #2. Due to limitations of equipment at location IRS #1 only 3 of the 4 parameters will be collected with dioxin and PCBs samples collected in a rotating scheme. The length of this intensive sampling will depend on the previous results but could be 2 to 6 days.~~

Details of the high volume sampling data collection, operation, and calibration are provided in Attachment 2.

Table 3-1 COPC Particulate Sampling and Analysis Approach

Parameter/Category	Method	Sampling and Analysis Approach	Reporting Limits
2,3,7,8-TCDD	USEPA TO-9A (particulate and gaseous phase)	Ambient air (high volume or equivalent) is drawn through quartz-fiber / polyurethane foam absorbent in a 24 hour period. Analytical procedures are extract followed by HRGC-HRMS	10 pg $3 \times 10^{-7} \text{ ug/m}^3$
Total PCBs	USEPA TO-4A (particulate and gaseous phase)	Ambient air (high volume or equivalent) is drawn through quartz-fiber / polyurethane foam absorbent in a 24 hour period. PCBs are extracted from media and analyzed per GC	1.0 ug 0.03 ug/m^3
Particulate Matter PM-10	PM10 and Total Suspended Particulate by NIOSH Method 0500	Ambient air (high volume or equivalent) is drawn via a 10 um size inlet through a glass fiber or quartz filter. Gravimetric particulate concentration based on weight difference.	$10 \text{ } \mu\text{g/m}^3$
Mercury	TAL Metals Filter Digestion	Ambient air (high volume or equivalent) is drawn via a 10 um size inlet through a glass fiber or quartz filter. Extraction followed by TAL metals analysis for mercury.	0.0005 ug/m^3

Test America – Knoxville - Attachment 3 Analytical SOPs. Particulates size captured will be 10 micrometers in diameter or less.

3.4. Barge Transport Monitoring

The barges used to transfer dredged sediment from RM 10.9 to the stabilization facility are part of the dredging operations so will be included in the air monitoring while at those locations. The dredge material will be wet and may have a layer of water on top of it as the sediment settles to the bottom of the barge and residual water comes to the top. For this reason and as shown in the Potential to Emit calculations performed for NJDEP (Attachment 4), emissions from the barged material will be low. It is anticipated that barges full of dredged sediment will only be stationary for very short periods of time, less than an hour, during the trip from RM 10.9 to the stabilization facility preventing downwind impacts.